ENERGY STAR Water Cooler Program
Draft Bottled Water Dispenser Specification
Version 1.0
December 22, 1999

The symbol for energy efficiency.

Below is the initial *draft* bottled water dispenser specification *(Version 1.0)* for the ENERGY STAR Water Cooler Program. In accordance with the requirements of the ENERGY STAR Program, a product must meet all of the identified criteria if it is to be qualified as ENERGY STAR compliant by its manufacturer.

1) Definitions: Below is a brief description of a bottled water dispenser and its common energy consumption characteristics as relevant to the ENERGY STAR Program.

   A. Bottled Water Dispenser: A free standing device whose purpose is to dispense water from removable 4 to 5-gallon plastic bottles commonly positioned on top of the unit.

   B. Standby Energy Consumption: Heating or cooling losses associated with keeping the water in the tank hot or cold and ready for use.

> *EPA Comments: Above are brief descriptions of common energy consumption characteristics for bottled water dispensers that EPA has observed in tests conducted by/for EPA. To achieve the maximum energy savings without compromising product performance, the ENERGY STAR specification will focus on standby energy consumption. In EPA tests, we found that standby losses account for the majority of bottled water dispenser energy use. Reducing standby losses is a cost-effective and feasible option for achieving substantial energy savings.*

2) Qualifying Products: For the purposes of this Program, bottled water dispensers include the following:

   A. Cold Only Units: These units dispense either cold water only, or both cold and room-temperature water, sometimes referred to as "Cook and Cold" units.

   B. Hot and Cold Units: These units dispense both hot and cold water. Some units may have a third room temperature tap. Units will have an electric resistance heater and a refrigeration cycle.

> *EPA Comments: EPA's interest in developing energy-efficiency guidelines for bottled water dispensers is driven by the following considerations: 1) a large and stable installed product base, 2) evidence of considerable energy consumption due to standby losses, 3) the potential for more energy-efficient design based on engineering analysis and manufacturer feedback, and 4) low-cost options for reducing standby energy consumption.*

3) Efficiency Specifications for Qualifying Products: Only those products listed in Section 2 that meet the specifications outlined in Table 1 below may qualify as ENERGY STAR compliant.

*Table 1: **Draft** Criteria for ENERGY STAR®-compliant bottled water dispensers (Version 1.0)*

Product Category	Energy Use Under Test Conditions
Cold only	≤ 0.13 kW-hours/day
Hot and Cold	≤ 1.20 kW-hours/day

EPA Comments: Based on a technical review of existing products and discussions with manufacturers, EPA feels that the specifications listed above for bottled water dispensers are challenging, reasonable, and technology-neutral. EPA estimates that the above specifications constitute an average reduction in standby energy consumption of roughly 30% for cold only units and roughly 40% for hot and cold units. As proposed, EPA recognizes that there are no models currently on the market that meet the specification. Testing conducted by/for EPA indicates the following:

- *Within the above categories, there is only a slight range in energy consumption among product models*
- *Current design practices result in significant standby losses, which account for the majority of the product energy consumption*

Given the magnitude of standby losses and the small range in efficiencies among the models, EPA cannot justify setting a standard based on currently available product models. EPA estimates that the majority of energy savings opportunities focus on reducing standby losses and that several low-cost design options exist that when implemented can meet the proposed specification.

4) Test Criteria: Test conditions as described below will focus on overall standby losses with no water being withdrawn during the testing procedure.

   a) Power Measurement: The energy use shall be measured as the total true power (kilowatt-hours) consumed in one 24-hour period.

   b) Starting Conditions: Before starting the energy measurements, the unit should be at operating conditions, with water temperatures as defined in item (f) below.

   c) Water Withdrawal: No water may be withdrawn from the units during the test.

   d) Timer Usage: If the unit has an integral, automatic timer, during the test the timer can be set to turn off the unit for not more than 10 hours.

   e) Ambient Temperature: Ambient air and water temperature must be at $70^{o} \pm 2^{o}$ F.

   f) Dispensed Water Temperatures: Cold water temperature shall not exceed 49^{o} F and hot water temperature shall be at least 165^{o}F. These temperatures shall be measured at the time the

respective function, compressor, or heating element turns on.

g) Dispenser Location: The unit must be no more than 6 inches from a wall, with the wall being a minimum of seven feet high and extending horizontally a minimum of two feet from each side of the unit.

h) Air Flow: Airflow around the unit must be natural; no artificial means of increasing the airflow are allowed. Airflow created by methods integral to the unit itself, such as internal fans, is permitted.

Manufacturers are invited to provide comments and/or suggestions on the test method.

5) Other Information: The *final* version of the ENERGY STAR bottled water dispenser specification will be provided in the standard Memorandum of Understanding (MOU) format (see text box below). In addition to the product specifications, other issues will be addressed such as the following.

- Buyer Information: In keeping with the spirit of the ENERGY STAR Program, the Partner will be expected to ensure that consumers have a quick and easy method of determining which of its products are ENERGY STAR compliant. To achieve this goal, EPA recommends that the Partner place the ENERGY STAR logo on all qualified product models, their packaging, and product-related materials such as brochures, manuals, advertisements, and Web sites. Further, to educate consumers about energy efficiency and its benefits, the Partner will provide one or more of the following: a description of the ENERGY STAR Program, a discussion of the energy-saving characteristics of the product, a description of the environmental benefits that result from the energy saved by the product, and/or a description of the potential energy-bill savings of the product. The Partner may determine the best manner to disseminate this information to customers.

- Effective Date: The date that manufacturers may begin to qualify products as ENERGY STAR compliant will be defined as the *effective date* of the MOU. This date is subject to negotiation with industry.

- Future Specification Revisions: EPA reserves the right to change the MOU requirements should technological and/or market changes affect its usefulness to consumers, industry, or the environment. Revisions to the MOU are generally arrived at through industry discussions.

EPA Comments: In order to focus EPA/industry discussions on the most crucial elements of the Program (i.e., the definitions and specifications), EPA has provided this brief draft specification as opposed to a complete MOU. However, the draft and final versions of the MOU will have all of the standard sections of an ENERGY STAR MOU, including "Common Agreements and Principles," "Entry Into Force and Duration," "Use of the ENERGY STAR Logo and Name," and "Conflict Resolution." As noted above, the product specification, effective date and the duration of the MOU will be negotiated with industry. As always, EPA welcomes comments or alternative proposals from industry that address these issues. EPA deems industry feedback crucial to the successful development of ENERGY STAR Programs.